entering less readily than the nitrate or the chloride. It is of great interest that a considerable sojourn in a hypotonic solution lowered the permeability of the cell to the salt and apparently to the water. FITTING says that this is not a toxic effect. The method shows no evidence that the salts of metals of alkaline earths (Mg, Ca, Ba, and Sr) enter the cells, so equilibrium between the inside and outside need not be reached even in a solution of an essential salt. One wonders whether the permeability in a plasmolytic concentration throws much light on permeability in natural conditions.—WILLIAM CROCKER.

Morphology of Peranema.—DAVIE[19] has investigated the development of the sorus, sporangium, and gametophyte of this Indian fern. The study was suggested by the possible intermediate character of the genus between Cyatheaceae and Polypodiaceae. The receptacle is of the Gradatae type, but the mature sorus is a mixed one. The sporangium also in its early segmentation sometimes follows the type of one family, and sometimes that of the other family. In comparing the features of the genus, the conclusion is reached that an intermediate series consisting of *Woodsia*, *Diacalpe*, and *Peranema* is probable, *Woodsia* coming nearest Cyatheaceae, and *Peranema* nearest Polypodiaceae. The mature sorus of *Peranema* is thought to be most related to that of *Nephrodium*, and a phyletic line is traced from the Cyatheaceae to the Aspidieae group of the Polypodiaceae.—J. M. C.

Two new terms.—TRELEASE[20] has proposed two new botanical terms to be applied to hitherto nameless morphological conditions. He points out that the old grouping of plants into thallophytes and cormophytes fails to include such plants as mosses, which are not cormophytes because, although "stem-like," they do not develop root and shoot. He proposes, therefore, a grouping of plants into 3 categories: thallophytes, "cormophytasters" (or pseudo-cormophytes), and cormophytes. The second term, "xeniophyte," is proposed for the so-called endosperm of angiosperms, which being neither an x nor a $2x$ generation is a third generation which has been "overlooked." The angiosperms, therefore, in addition to their other peculiar features, are unique in having 3 generations: sporophyte, gametophyte, and xeniophyte.—J. M. C.

Seed germination in Megarrhiza.—HILL[21] has investigated the peculiar seed germination of several species of this genus, which is also known as *Marah*. The petioles of the cotyledons are "fused together" to form a tube, which

[19] DAVIE, R. C., The development of the sorus and sporangium and the prothallus of *Peranema cycathoides* D. Don. Ann. Botany **30**:101–110. *pl. 3. figs. 2.* 1916.

[20] TRELEASE, WILLIAM, Two new terms, cormophytaster and xeniophyte, axiomatically fundamental in botany. Proc. Amer. Phil. Soc. **55**:237–242. 1916.

[21] HILL, A. W., Studies in seed germination. The genus *Marah* (*Megarrhiza*), Cucurbitaceae. Ann. Botany **30**:215–222. *pl. 5. figs. 2.* 1916.